Bone Marrow Data Visualization for Improving Patient Analysis, Diagnosis, and Care

Nic Dobbins, Master of Library and Information Science  ndobb@uw.edu

Problem
- An estimated 20-30% of patients with fatal diseases are misdiagnosed in the United States every year.¹
- Integrating existing electronic medical record systems is often complicated and expensive, delaying critical decisions necessary for patient care.
- In many cases, patient clinical data continue to be stored in hand-made spreadsheets vulnerable to human-error.²

The Neutropenia Clinical Dashboard provides clinicians and staff at the Severe Chronic Neutropenia Registry with the tools to accurately and efficiently analyze bone marrow, medication, and other medical data.

Analysis and Design

Develop Database
Create back-end database to integrate data

Research
Examine existing medical data visualization tools

Prototype
Create application interface and structure

Refine
Reiterate design and incorporate user feedback

UX Test
Work with users to understand needs and use cases

Code
Program initial design and functionality

Impact

The Dashboard was featured on PBS’s Healthy Body, Healthy Mind in May 2013

“Understanding neutropenia is important for patients, families as well as nurses and physicians. We all need to know patterns of blood counts—how high they go, how low they go, and when they are low. The Neutropenia Dashboard is the perfect tool to see and understand these patterns.”

Dr. David C. Dale
Professor of Medicine
Dean, UW School of Medicine 1982-1986

Pre-Capstone


Acknowledgements
Special thanks to Audrey Anna Bolyard, RN, BS and everyone at the Severe Chronic Neutropenia Intl. Registry for their knowledge and dedication to patients, and without whose tremendous support this project would not have been possible.